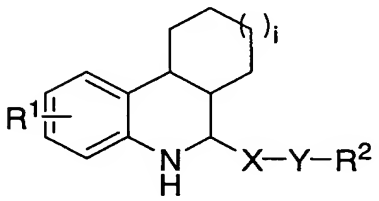
CLAIMS

1. A tetrahydroquinoline derivative represented by the following formula (I), or pharmacologically acceptable salts thereof:



(I)

where R^1 represents a nitro group or a cyano group;

i represents 0 or 1;

X represents an alkylene group having 1 - 5 carbon atoms which may be substituted by a substituent selected from the group consisting of an alkyl group having 1 - 6 carbon atoms and a cycloalkyl group having 3 - 7 carbon atoms;

Y represents $-NR^3CO-$, $-NR^3SO_2-$, $-NR^3CONH-$ or $-NR^3CSNH-$ (where R^3 represents a hydrogen atom, an alkyl group having 1 - 6 carbon atoms, a cycloalkyl group having 3 - 7 carbon atoms, or an aralkyl group having 7 - 9 carbon atoms); and

R^2 represents a phenyl group which may be substituted by 1 - 3 independent R^4's, or a heteroaryl group which may be substituted by 1 - 3 independent $R^{4'}$'s [where R^4 and $R^{4'}$ independently represent an alkyl group having 1 - 6 carbon atoms which may be substituted by a fluorine atom, a halogen atom, a nitro group, a cyano group, $-A-R^{5A}$ {where A is $-CO-$, $-CO_2-$, $-CONR^6-$, $-O-$, $-OCO-$, $-NR^6-$, $-NR^6CO-$, $-NR^6SO_2-$,

$-NR^6CONH-$, $-NR^6CSNH-$ or $-NR^6COO-$ (where R^6 independently has the same meaning as the aforementioned R^3), and R^{5A} represents a hydrogen atom, an alkyl group having 1 - 6 carbon atoms which may be substituted by a fluorine atom, or a cycloalkyl group having 3 - 7 carbon atoms}, or $-B-(CH_2)_n-R^{5B}$ {where B represents a single bond, $-CO-$, $-CO_2-$, $-CONR^{6'}-$, $-O-$, $-OCO-$, $-NR^{6'}-$, $-NR^{6'}CO-$, $-NR^{6'}SO_2-$, $-NR^{6'}CONH-$, $-NR^{6'}CSNH-$ or $-NR^{6'}COO-$ (where $R^{6'}$ independently has the same meaning as the aforementioned R^3), n represents an integer of 1 or 2, and R^{5B} represents an alkyl group having 1 - 6 carbon atoms which may be substituted by a fluorine atom, a cycloalkyl group having 3 - 7 carbon atoms, a halogen atom, a hydroxyl group, a cyano group, an alkoxy group having 1 - 5 carbon atoms, or $-NR^{7'}R^{8'}$ (where $R^{7'}$ and $R^{8'}$ independently have the same meaning as the aforementioned R^3)}], or $-C\equiv C-R^9$ {where R^9 represents a hydrogen atom, an alkyl group having 1 - 6 carbon atoms which may be substituted by a fluorine atom, a cycloalkyl group having 3 - 7 carbon atoms, or an aryl group which may be substituted by R^{10} (where R^{10} represents an alkyl group having 1 - 6 carbon atoms which may be substituted by a fluorine atom, or a halogen atom)}.

2. The tetrahydroquinoline derivative or pharmacologically acceptable salts thereof according to claim 1, wherein i is 0, X is $-C(CH_3)_2-CH_2-$, Y is $-NHCO-$ or $-NHCONH-$, and R^2 represents a phenyl group which may be substituted by 1 - 3 independent R^4's, or a heteroaryl group which may be substituted by 1 - 3 independent $R^{4'}$'s

[where R^4 and $R^{4'}$ independently represent an alkyl group having 1 - 6 carbon atoms which may be substituted by a fluorine atom, a halogen atom, -A-R^{5A} {where A represents -CO-, -O-, -OCO-, -NR^6-, -NR^6CO- or -NR^6CONH- (where R^6 represents a hydrogen atom or a methyl group), and R^{5A} represents a hydrogen atom, an alkyl group having 1 - 6 carbon atoms which may be substituted by a fluorine atom, or a cycloalkyl group having 3 - 7 carbon atoms}, or -B-$(CH_2)_n$-R^{5B} {where B represents -CO-, -O-, -OCO-, -$NR^{6'}$-, -$NR^{6'}$CO- or -$NR^{6'}$CONH- (where $R^{6'}$ represents a hydrogen atom or a methyl group), n represents an integer of 1 or 2, and R^{5B} represents an alkyl group having 1 - 6 carbon atoms which may be substituted by a fluorine atom, a cycloalkyl group having 3 - 7 carbon atoms, or an alkoxy group having 1 - 5 carbon atoms}].

3. The tetrahydroquinoline derivative or pharmacologically acceptable salts thereof according to claim 1, wherein i is 0, X is -$C(CH_3)_2$-CH_2-, Y is -NHCO-, and R^2 is a phenyl group which may be substituted by 1 - 3 independent R^4's, or a heteroaryl group which may be substituted by 1 - 3 independent $R^{4'}$'s [where R^4 and $R^{4'}$ independently represent an alkyl group having 1 - 6 carbon atoms which may be substituted by a fluorine atom, a halogen atom, -A-R^{5A} {where A represents -CO-, -O-, -OCO-, -NH-, -NHCO- or -NHCONH-, and R^{5A} represents a hydrogen atom, an alkyl group having 1 - 6 carbon atoms which may be substituted by a fluorine atom, or a cycloalkyl group having 3 - 7 carbon atoms}, or -B-$(CH_2)_n$-R^{5B} {where B

represents -CO-, -O-, -OCO-, -NH-, -NHCO- or -NHCONH-, n represents an integer of 1 or 2, and R^{5B} represents an alkyl group having 1 - 6 carbon atoms which may be substituted by a fluorine atom, a cycloalkyl group having 3 - 7 carbon atoms, or an alkoxy group having 1 - 5 carbon atoms}].

4. The tetrahydroquinoline derivative or pharmacologically acceptable salts thereof according to claim 1, wherein i is 0, X is $-C(CH_3)_2-CH_2-$, Y is -NHCO-, and R^2 is a heteroaryl group which may be substituted by 1 - 3 independent $R^{4'}$'s {where $R^{4'}$ represents an alkyl group having 1 - 6 carbon atoms which may be substituted by a fluorine atom, a halogen atom, $-A-R^{5A}$ (where A represents -O- or -NHCO-, and R^{5A} represents a hydrogen atom, or an alkyl group having 1 - 6 carbon atoms which may be substituted by a fluorine atom), or $-B-CH_2-R^{5B}$ (where B represents -O- or -NHCO-, and R^{5B} represents an alkyl group having 1 - 6 carbon atoms which may be substituted by a fluorine atom, or an alkoxy group having 1 - 5 carbon atoms)}.

5. The tetrahydroquinoline derivative or pharmacologically acceptable salts thereof according to claim 3, wherein R^2 is a phenyl group having substituent R^4 at 4-position, or a 6-membered heteroaryl group having substituent $R^{4'}$ at 4-position [where R^4 and $R^{4'}$ independently represent a halogen atom, $-O-R^{5A}$, or $-NHCO-R^{5A}$ (where R^{5A} represents a hydrogen atom, or an alkyl group having 1 - 6 carbon atoms which may be substituted by a fluorine atom)].

6. The tetrahydroquinoline derivative or

pharmacologically acceptable salts thereof according to claim 3, wherein R^2 is a phenyl group having substituent R^4 at 4-position, or a 6-membered heteroaryl group having substituent $R^{4'}$ at 4-position [where R^4 and $R^{4'}$ independently represent -NHCO-R^{5A} (where R^{5A} represents a hydrogen atom, or an alkyl group having 1 - 6 carbon atoms which may be substituted by a fluorine atom)].

7. The tetrahydroquinoline derivative or pharmacologically acceptable salts thereof according to claim 1, wherein i is 0, X is $-C(CH_3)_2-CH_2-$, Y is -NHCO-, and R^2 is $-C\equiv C-R^9$ {where R^9 represents an alkyl group having 1 - 6 carbon atoms which may be substituted by a fluorine atom, or an aryl group which may be substituted by R^{10} (where R^{10} represents an alkyl group having 1 - 6 carbon atoms which may be substituted by a fluorine atom, or a halogen atom)}.

8. The tetrahydroquinoline derivative or pharmacologically acceptable salts thereof according to claim 7, wherein R^9 represents an alkyl group having 1 - 6 carbon atoms which may be substituted by a fluorine atom, or a phenyl group.

9. A pharmaceutical comprising the tetrahydroquinoline derivative or pharmacologically acceptable salts thereof according to any one of claims 1 to 8 as an active ingredient.

10. The pharmaceutical according to claim 9 which is an androgen receptor agonist.

11. The pharmaceutical according to claim 10 which can

be used in preventing or treating osteoporosis or wasting disease.

12. The pharmaceutical according to claim 10 which can be used in preventing or treating a disease selected from the group consisting of male hypogonadism, male sexual dysfunction, abnormal sex differentiation, male delayed puberty, carcinoma of female genitalia, breast cancer, mastopathy, endometriosis and female sexual dysfunction.

13. The pharmaceutical according to claim 10 which can be used in preventing or treating hematopoietic dysfunction and a disease related thereto.

14. A method for preventing or treating wasting disease or osteoporosis, comprising administering the tetrahydroquinoline derivative or pharmacologically acceptable salts thereof according to any one of claims 1 to 8, in an amount effective for prevention or treatment of such disease, to a mammal requiring such prevention or treatment.

15. A method for preventing or treating a disease selected from the group consisting of male hypogonadism, male sexual dysfunction, abnormal sex differentiation, male delayed puberty, carcinoma of female genitalia, breast cancer, mastopathy, endometriosis and female sexual dysfunction, said method comprising administering the tetrahydroquinoline derivative or pharmacologically acceptable salts thereof according to any one of claims 1 to 8, in an amount effective for prevention or treatment of such disease, to a mammal requiring such prevention or

treatment.

16. A method for preventing or treating hematopoietic dysfunction and a disease related thereto, said method comprising administering the tetrahydroquinoline derivative or pharmacologically acceptable salts thereof according to any one of claims 1 to 8, in an amount effective for prevention or treatment of such disease, to a mammal requiring such prevention or treatment.